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I.—*Notes on Birds observed at Erzerum.* By P. J. C. MCGREGOR, M.B.O.U., lately H.M. Consul for Palestine.

THE following list of birds observed at Erzerum is compiled from a diary kept regularly during a residence in that town from January 1910 to April 1912, and is supplemented by a few notes regarding the times of arrival and departure of some species.

It should be stated at the outset that the list is necessarily far from complete, as, in addition to the limitations imposed by my ordinary duties, it was found impossible to make a systematic exploration of the Kara Su marshes, which is precisely the part of the Erzerum plateau where bird-life is probably most abundant. The notes relate, in fact, almost exclusively to the birds to be met with in a radius of five or six miles from the town itself, and they are offered to the reader merely on account of the comparative meagreness of previous observations in this region.

Erzerum is situated at a height of about 6100 feet on the southern side of the vast and desolate plain watered by the Kara Su, an affluent of the Euphrates. It is about 160 miles in a direct line from Trebizond and 120 miles from Kars. To the north the plain is bounded by lofty mountains, the

principal summits of which are Kop Dagh and Dumla Dagh, while immediately behind the town the *massif*, comprising Palantukyen ("The wearer-out of pack-saddles") and Eyer Dagh ("Saddle Mountain"), rises steeply to a height of 10,000 feet.

The climate is of extreme rigour, as snow falls in the town in October and snow-storms may occur late in June, although a thaw generally begins in April. Intense cold prevails for at least four months, and blizzards are of frequent occurrence; but the brief summer is hot and dry, dew at night being almost unknown.

The entire region may be characterized as treeless, except for a few poplars and willows in the town itself and in some sheltered nooks among the mountains, and nothing taller than the henbane is produced by the light yellow loam of the plain. A small crop of stunted oats is grown in summer, and there are extensive vegetable-gardens to the north of the town, which are a favourite haunt of spring and autumn migrants. The flora comprises a great variety of vetches, bulbous plants, and thistles of brilliant colouring, and the early summer clothes the plain and the mountain slopes with green for a brief spell; but the general note is one of tawny desolation and aridity.

Under these circumstances the scantiness of bird-life cannot surprise. In the dead winter one sees practically nothing but Jackdaws, Sparrows, and an occasional Magpie or Tit in the town, while flocks of Field- and Shore-Larks seek for a living on the roads outside. The spring migration is usually accomplished under conditions resembling those of a severe winter in England, and, although the nesting of Starlings, Wheatears, Swifts, Kestrels, and Rock-Sparrows gives a certain animation to the summer months, it is not until autumn that the numbers and movements of the birds become conspicuous enough to enliven these solitudes. At that season the defile known as the Kyrk Deïrmen Boghaz ("The Defile of the Forty Mills"), situated about three miles west of the town, becomes one of the most interesting observation-posts in the vicinity on

account of its running waters and small grooves of trees, which make it an attractive haven of rest for thousands of migrants.

In putting together these notes I have, in the main, adhered to the nomenclature adopted in the recently published B. O. U. list, and I desire to express my obligations to Dr. E. Hartert and Dr. W. Eagle Clarke, who have kindly read through the MS. and given me invaluable encouragement and assistance.

Corvus frugilegus. Rook.

In 1910 I noticed the first Rook on March 16, and on the succeeding days, the weather being sunny and windless, I saw small parties winging their way northwards towards the Kop Dagħ Pass. It was not, however, until the 20th of the month that the Rooks appeared in numbers in the town and neighbourhood, and on the 30th they had begun to repair their nests. They seem to take their departure early in October, the last flock having been observed on October 12, 1911; but I have seen stray birds in company with Jackdaws as late as the 1st of December.

Corvus monedula. Jackdaw.

The ramparts, as well as the mosques and other public buildings, swarm with these birds and every house shelters a pair or two in its walls or halfway down its chimney. The Erzerum Jackdaws all belong to one pronounced type, the nuchal collar being of a very silvery grey, passing in many instances into pure white, and they would thus appear to belong to the subspecies *C. m. collaris*. Partial albinism is not uncommon, and one bird which haunted my house had half the pinions of the right wing snowy white.

Most of the Jackdaws seem to remain paired during the winter, and when, as appears often to be the case, food is scarce, they present a doleful picture, perching with ruffled plumage in the bare poplar trees, or on the projecting beam-ends with which every house bristles. Towards evening, however, the entire Jackdaw population rises in a vast black

cloud and, mingling with a certain proportion of Rooks, proceeds to execute elaborate and noisy manœuvres over the plain till just before nightfall, when all return gleefully to their quarters.

Nest-building was begun in 1910 about the middle of March, and when during the first week in April the snow began to disappear from the fields, they were to be seen foraging in company with Lapwings, Rooks, and Starlings. A return of winter, however, interfered with their nesting-arrangements, and it was the 30th of April before either Rooks or Jackdaws had eggs. During May and June they find abundant nourishment in the fields and vegetable-gardens near the town; but later on they seem to extend their daily journey to the swamps of the Kara Su, and in my camp it was a rare occurrence to observe a Jackdaw. My impression is that they do not frequent the villages, but during a visit to Hassan Kala'a, about fifteen miles east of Erzerum, I found them in numbers sharing the ruins of the Citadel with Swallows, Wheatears, and Starlings.

Pica pica. Magpie.

Magpies may be met with throughout the year, but they are not abundant and do not collect in flights as in the Balkan countries. Only on one occasion—and that was on March 28, 1911—did I see a flock; it was composed of about twenty individuals, and on that day isolated specimens were noticeably numerous. In the depth of winter they are constantly to be seen in the town and are an enlivening feature in the roof landscape.

Sturnus purpurascens. Starling.

Immense numbers breed in the town of Erzerum and at Hassan Kala'a, where the roughly built stone-houses and the extensive fortifications afford abundance of nesting accommodation. The Starlings first appear in large flocks about the 15th of March, and from that date onwards every patch of soil laid bare by the increasing warmth of the sun is crowded with these birds in company with Lapwings, Rooks, Jackdaws, Pipits, and Rock-Doves, the

Starlings being, however, the most numerous. A little later they take to flighting in masses, and towards sun-down every day they almost blacken the sky before settling for the night, when they throng the branches of the poplars, clothing them for the nonce in a sable foliage of sinister aspect against the background of endless mud-coloured flat roofs. The young are fledged about the end of May, and early in June the Starlings abandon the town for the cultivated fields and the Kara Su marshes, where they spend the summer. Migration seems to take place in October, but occasional flights and isolated individuals may be observed as late as the 19th of November, and I noted a couple on the 27th of December, 1911, during a spell of comparatively genial weather.

Pastor roseus. Rose-coloured Pastor.

On May 4, 1910, I observed seven or eight among a flock of Starlings close to the Tortum Gate, and two days later they were at the same spot, but by themselves. Again, on the 21st of June, a flock of about thirty flew over my house.

In 1911, on June 1, I observed about twenty birds at Boghaz, and a solitary individual was recorded near my camp on August 8.

Oriolus oriolus. Golden Oriole.

I observed in 1910 one, in green plumage, on September 3, and two, also in green plumage, on September 12. On August 30, 1911, saw an adult male.

Chloris chloris. Greenfinch.

One was observed on April 22, 1910.

Carduelis carduelis. Goldfinch.

So far as I was able to observe, the Goldfinch does not breed in the Erzerum district, which, indeed, offers scanty inducement to them to do so, orchards and bushes not being a feature of the local vegetation.

In 1910, I noted, on March 16 and 18, that small flights were singing among the trees in the Armenian cemetery, and others were observed on March 21 and April 8.

Another flock came under my notice on April 15 after a prolonged blizzard ; but none were observed during the summer, the next records being October 26 and November 22, when I saw a few, and December 29, when I saw a couple.

In 1911 I noticed two on February 8 and one on February 10, the weather at that time being abnormally mild.

Passer domesticus. House-Sparrow.

The House-Sparrow is abundant in the town throughout the year, nesting not only in the willows and poplars, but in crevices of the rudely built stone houses and in the town ramparts. I very seldom observed it during my sojourn in camp and it seems, as a rule, to avoid the open country. On one occasion, however, I saw a small flock being chased by a Sparrow-Hawk near my camp (September 8, 1910).

Petronia petronia exigua. Rock-Sparrow.

On April 11, 1910, the weather being boisterous but sunny, my attention was arrested by a loud chorus of Sparrow-like chirps from a number of small birds perched on the wall of the Mussulman cemetery, and a closer examination soon enabled me to identify the vocalists as Rock-Sparrows. Their numbers increased rapidly during the following days, despite heavy snowstorms, and by the end of May, not only the cemeteries and fortifications, but the rocky gorges and boulder-strewn hill-sides resounded with their querulous chirping. I found the Rock-Sparrow in great numbers among the ruins of the Citadel at Hassan Kala'a, and it is one of the most conspicuous summer residents at Erzerum. They appear to take their departure comparatively early, as I never saw any after the 17th of August.

Montifringilla alpicola. Snow-Finch.

The Snow-Finch's melodious call is occasionally to be heard among the rocky slopes between Erzerum and the Devé Boyun Pass. I first saw the bird on April 27, 1910,

and on June 24 I found a pair feeding their young in a nest built in a hole in a bank about five feet above the road leading to that Pass.

Fringilla cœlebs. Chaffinch.

Fairly common as a migrant in spring and autumn. The earliest date of observation is March 16, 1911, and no spring migrants were noted after April 16. The sexes were always in separate flights, but on April 2, 1910, a mixed flock of Chaffinches and Bramblings was seen. The return passage was first noticed on August 20, 1910, but large flights were recorded in October of each year, and in 1910 and 1911 I noted having seen large flights of hens on November 8.

Fringilla montifringilla. Brambling.

In 1910 I observed these birds twice—once with a flight of Chaffinches on April 2, and again on the rather advanced date of June 4.

Carpodacus rubicilla. Caucasian Rose-Finch.

This splendidly plumaged bird first came under my observation on June 9, 1910, when I noticed three pairs at Kyrk Deirmen; and I am inclined to think that they constituted the entire stock in that neighbourhood, which was the one spot within many miles affording the conditions of habitat supposed to be sought after by the Rose-Finch, namely, a sheltered gorge with running water, groves of trees, and a sufficiency of lush herbage.

Conspicuous as the cock-bird is, my attention was first arrested by his song, which resembles that of the Blackcap in quality, but is less prolonged and is repeated at short intervals while the songster remains concealed among the foliage. I frequently saw these birds in the neighbourhood and, as two pairs were to be found regularly in the willows in my camp-enclosure during June and July, I am convinced that they were nesting there, but diligent search failed to reveal their nest, and I never saw the young—in fact, the birds completely disappeared in August. They

were rather restless in their movements, but not shy, the cock-bird constantly flitting from tree to tree and pouring out his flute-like notes, often within a few yards of where I was sitting, while the hen was seldom seen except towards evening, hopping among the lower branches with her mate and feeding on grass-seeds or an occasional green caterpillar from the willow-leaves.

Rhodopechys sanguinea. Crimson-winged Bullfinch.

From the beginning of May onwards small flights are frequently to be seen in the low-lying fields and waste land. They are restless and shy, constantly flitting about with a plaintively musical call. The rosy-pink colour of their quills is very striking when a whole party rises from the brown earth. Later on they frequent the same sort of ground as the Ortolans, and I have often seen numbers of them feeding with Sparrows outside the primitive country flour-mills. My impression is that they ascend a considerable height into the mountains and that they have two broods, as I have seen family-parties with young hardly able to fly as late as August 20. I never came across any after September 6. So far as I was able to observe, their song is a phrase of four or five notes reminiscent of the Robin.

Emberiza calandra. Corn-Bunting.

One of the most prominent and characteristic features of the summer landscape. The arid and unlovely stretches of waste land around the town are studded with tall bushes of henbane, and every one of these sinister-looking plants serves as a post of observation for the quarrelsome Corn-Bunting, whose strident tones fitly voice the melancholy of the scene. It arrives at the end of April and is also abundant in the Passen Plain, taking its departure from Erzerum in the first week of August.

Emberiza citrinella. Yellow Hammer.

In three successive years I saw small flocks between the 16th and the 30th of March, and on May 14, 1911, I observed a solitary specimen.

Emberiza melanocephala. Black-headed Bunting.

Fairly common at Hassan Kala'a and less so in certain parts of the Erzerum plateau. Only once seen near the town (May 20, 1910).

Emberiza cia. Meadow-Bunting.

On the 12th and 13th of April, after a heavy south-west gale, seven or eight were observed in a field outside the town, and on October 31 of the following year there were several in the Kyrk Deïrmen gorge.

Emberiza hortulana. Ortolan.

Fairly abundant on the lower slopes of the hill south of the town. They appear in the last days of April and seem to leave about September 15.

Emberiza pusilla. Little Bunting.

Three were observed on March 21, 1910, among a flock of Yellow Hammers.

Emberiza schœniclus. Reed-Bunting.

One was observed in the vegetable-gardens outside the walls on March 18, 1910.

Alauda arvensis. Skylark.

During the phenomenally severe winter of 1910, Skylarks congregated in great numbers in the neighbourhood of the town, associating frequently with Shore-Larks and Calandra Larks, and apparently picking up their food among the droppings of pack-animals until milder weather laid bare patches of earth in some favoured spots. Despite the rigorous climatic conditions the Larks were always plump enough to be a welcome variety in one's bill-of-fare. Towards the end of March the flocks began to disperse, and the birds were to be heard singing gaily in the plain; but a return of wintry weather drove them back in flocks to the town, and it was not until about the 20th of April that they finally scattered. I find that I observed them singing on the Top Dagh and at Kyrk Deïrmen as late as June 9, but after that date no record occurs till October 23,

when small flocks again began to form outside the town ramparts. It was not, however, until winter had really set in that large numbers were constantly to be met with.

Galerida cristata. Crested Lark.

The Crested Lark is resident throughout the year, its numbers being, however, much reduced in winter.

Melanocorypha calandra. Calandra Lark.

This species came under my observation for the first time on March 10, 1910, consorting with Sky- and Shore-Larks immediately outside the town walls, and two days subsequently I procured a specimen at the same place. I saw a few at Hassan Kala'a on June 24 and in 1911. I again observed several specimens on March 10 at Ilijé and on May 1 at Ghez, these two localities being villages on the Trebizond road about an hour's drive from Erzerum.

Otocorys alpestris. Shore-Lark.

My first acquaintance with the Shore-Lark was made during my sleigh-journey from Kars through Sary Kamysh and Kara Urgan to Erzerum in January 1910. These graceful birds were almost the only living creatures that were to be seen in this wind-swept waste of snow, and they congregated in considerable numbers by the roadside, uttering their plaintively musical call as they flitted aside on the approach of the sledge.

During the rigour of the winter months they were to be met with in numerous scattered flocks outside the town walls, but towards the end of March, when a spell of milder weather set in, they would disappear, to return with the first blizzard and linger till nearly the end of April. From May onwards they were to be met with in pairs at an altitude of at least several hundred feet above the town.

I should like to point out that, while specimens shot by me answered in every respect to Dresser's description of *O. alpestris* ('Manual of Palearctic Birds'), inasmuch as the feathers of the throat and forehead were yellow, I also procured specimens of *O. penicillata*, and all the birds

observed near Erzerum during the summer seemed to belong to the latter type. My impression, however, is that in winter *O. alpestris* was in the majority. I also noted the Shore-Lark was the first of its family to put in an appearance in winter, being abundant about the end of December; whereas the Skylark did not appear till more than a month later.

Otocorys penicillata.

As already mentioned, I observed and procured specimens of this species occasionally in winter, and it seemed to be the predominating type during the summer months.

Motacilla alba. White Wagtail.

From about the 20th of March till April 18 small numbers are to be seen, and a few probably remain in the vicinity of the marshes, but I never came across any near the town in summer. The autumn migration becomes noticeable at the end of September, and fairly large flocks pass through until the middle of October. They seem to arrive in the evening and were seldom observed in the daytime.

Motacilla boarula. Grey Wagtail.

Never observed earlier than the 5th of August, and then either singly or in pairs near running water. Large flocks, however, appeared between the 10th and the 16th of September, and afterwards stray individuals were to be met with up to October 18.

Motacilla flava. Blue-headed Wagtail.

Large flocks appeared between August 23 and September 20, usually following the sheep in company with *M. boarula*. Several specimens were shot, among them being a male which seemed to answer closely to Hartert's description of *M. f. borealis*. In 1911, I recorded them as abundant on October 3.

Motacilla feldeggii. Black-headed Wagtail.

Common in the marshes and around Ilijé. Was first seen on May 5.

Anthus trivialis. Tree-Pipit.

The Tree-Pipit was observed in small numbers between April 11 and 19, and again in autumn from the beginning of August till the first days of October.

Anthus pratensis. Meadow-Pipit.

Only observed on migration in early April.

Sitta neumayeri (Michah.). Rock-Nuthatch.

Saw one pair among the rocks at Hassan Kala'a, in the Passen Plain, on June 24, 1910.

Parus major. Great Tit.

A few pairs were occasionally to be seen near and in the town from the end of October till towards the end of February, when they disappeared. Not observed in summer.

Parus cæruleus. Blue Tit.

A few were observed in February and March, and again in November of each year.

Ægithalus pendulinus. Penduline Titmouse.

Several pairs bred regularly among a thicket of willows overhanging a mountain streamlet not far from Erzerum.

Lanius minor. Lesser Grey Shrike.

Seldom seen in summer, but was very common as a migrant. Lesser Shrikes appear at the beginning of May, but are not so noticeable as in autumn, when small parties begin to pass about August 20 and may be observed almost daily till the first week in September. They used to drop into the trees exactly at sunset, and most of them had disappeared before dawn.

Lanius collurio. Red-backed Shrike.

This species begins to arrive a few days earlier than the Lesser Shrike and remains a little later, but in other respects calls for no special remark. In both cases the

immature birds seem to precede the adults in the autumn migration.

Sylvia communis. Whitethroat.

From the last week in April till the first week in May Whitethroats appeared in small numbers in the vegetable-gardens and by the water-courses in the plain, but I never saw any in summer. The autumn passage began between August 7 and 10 and continued for about six weeks, the latest record being September 19. I never observed more than a very few at one time.

Sylvia curruca. Lesser Whitethroat.

Was only once observed in spring, on May 14, 1911, but is fairly common on passage in autumn. The earliest date recorded at the latter season is August 2, 1911, after which none appeared till August 24; but from the beginning of September they were to be observed almost daily until almost the end of the month. The largest numbers were observed about September 14-16.

Sylvia simplex. Garden-Warbler.

On September 4, 1910, I saw two at Baghaz, one of which was shot.

Sylvia atricapilla. Blackcap.

Observed one adult male on May 15, 1911.

Sylvia nisoria. Barred Warbler.

On September 7, 1910, I observed two in my camp, and a little later found a party of four in a hedge a short distance away. One of these was an adult male, and another which I shot proved to be an immature male. Several were observed on the 13th and 14th at the same spot, and on the 19th I recorded a solitary specimen.

In 1911, I observed two on May 14 and one on the following day. No more were seen till August 18, when I found half a dozen young birds among some currant-bushes near the camp. On the following day one was seen and on the 21st several. Solitary specimens were recorded on the 3rd and 5th of September.

Acrocephalus palustris. Marsh-Warbler.

In 1910 about half a dozen specimens, evidently on passage, appeared between the 23rd and the 29th of September, and I shot one.

Phylloscopus trochilus. Willow-Wren.

The earliest date on which I recorded the arrival of the Willow-Wren is April 14, 1910, none having been observed in the following year till May 1. In 1910, however, they were not seen in any numbers (two and three together) till April 15-18, and I saw none after May 5 until I went into camp, when a few were to be found among the trees at the Boghaz (the gorge below Eyer Dagb). They were abundant on passage from September 20 to October 18, the largest flights being the latest.

Phylloscopus sibilatrix. Wood-Warbler.

On October 1, 1911, I observed a Warbler which I took to be of this species.

Phylloscopus collybita. Chiffchaff.

Appeared about the 4th of April and, despite cold and snow, continued to pass steadily and in increasing numbers until the end of the month. The autumn passage began regularly about the 1st of September, and numbers were to be seen in the kitchen-gardens and in the scrub till mid-October, the latest record being the 15th of the month.

A few Chiffchaffs were noted as having been seen in May, July, and August, 1911, but it is quite possible that these may have been insufficiently identified and may have belonged to some allied species which remains to be bred.

Turdus musicus. Song-Thrush.

Only seen on migration in spring. In 1910 half a dozen were observed between April 4 and 14, and in 1911 one on April 15.

Turdus iliacus. Redwing.

One was observed on April 15, 1910, after a heavy snow-storm.

Turdus merula. Blackbird.

Observed : 1910, April 4, one ; 1911, October 31, several in the Kyrk Deïrmen gorge.

Monticola saxatilis. Rock-Thrush.

A certain rocky gorge near the town harboured three pairs of Rock-Thrushes each summer, and another pair nested regularly at Boghaz. They were first seen on May 2 and were among the most attractive of the summer visitors, the brilliantly clad cock-bird filling the sombre solitude with melody as he tumbled in the air before his mate or piped thoughtfully on a rock not far from the nest. The young birds were abroad foraging for themselves early in August, and I did not see any after the 15th of September.

Phœnicurus phœnicurus. Redstart.

Very abundant as a migrant, and remains to breed in small numbers. The usual date of arrival in spring is the 11th or 12th of April, and for a month afterwards hardly a day passes without a few being seen in a row of poplars near the Tortum Gate.

The fact of being under canvas in the autumn gave me a much better opportunity of witnessing the passage south-westwards, and the limited numbers observed in spring had by no means prepared me for the intensity of the return movement, which began about the 1st of September and continued without intermission till the 18th of October. At first I observed only parties of from six to twenty, mostly females and immature birds, but about the 8th the flights grew larger and included some adult males, and from the 21st of September to the 18th of October, 1910, I was able to note almost daily that they were "swarming" in the trees in my camp, in all the low vegetation in the neighbourhood, and in the outskirts of the town. They were usually more numerous in the morning and had generally disappeared early in the afternoon—but by no means invariably. Stragglers were noticed till as late as November 5.

The Redstarts near the camp were very confiding and with their fledglings were regular visitors to the tents.

Erithacus rubecula hyrcanus. Redbreast.

Observed one on September 26, 1910. In 1911, October 26, one, and October 31, one.

Luscinia luscinia. Thrush-Nightingale or Sprosser.

I am informed that this Nightingale is a summer visitor in the Erzinjan district, but am doubtful of its being other than exceptional as a breeding species in the inhospitable region of Erzerum.

In 1910, on April 14, during a snow-storm, I observed one lurking in a hedge, and another was seen near Kyrk Dörmen on June 9. I also noticed a specimen three times between the 10th and the 17th of September, but imagine it was the same bird on each occasion.

In 1911, I saw a Sprosser on May 9, and on July 30 a bird haunted my tent all day, perching on a chair close beside me, and even alighting on the table I was writing at to pick up dead flies from a fly-paper. It paid almost daily visits to my tent till August 7, when it indulged in some throaty warbling. A Nightingale, presumably the same, was seen on August 9.

It has been suggested to me by a high authority that this species may be *L. megarhynchos africana*, but I must leave this, as also various other points that will doubtless occur to the reader, to the researches of future observers.

Cyanosylvia suecica cyanecula. White-spotted Bluethroat.

On April 8, 1910, while walking in a field where the melting snow had exposed some patches of earth, I came across a fine cock-bird in full plumage, and a few minutes later I discovered two hens, all evidently hungry and exhausted—so much so that one of them allowed itself to be carried away by a rush of water from an irrigation-channel and narrowly escaped drowning. At some distance from this spot I came across a fourth specimen, with very dull throat-markings.

My other observations in spring were as follows:—
“April 11, boisterous and snowy; saw a Bluethroat ♀ at the poplars. April 15, snow last night; saw a Bluethroat ♀ in

the Public Gardens. April 16, one ♀ at the poplars. April 29, one fine ♂ at the poplars. May 5, one ♀ at Ilijé."

None were observed in summer, but in the latter half of August I saw several males and females, all presumably on passage.

In 1911, the Bluethroat came under my notice only three times : between April 12 and May 1, when single individuals were observed.

Saxicola rubicola. Stonechat.

One cock-bird was observed on the 12th and 13th of April, 1910, after a strong S.W. gale, and in the following year I observed another specimen on the 26th of April.

Saxicola rubetra. Whinchat.

A rarely observed migrant, noticed once early in May, and on a few occasions between August 1 and October 1.

Cenanthe cenanthe. Wheatear.

The stony arid slopes which surround Erzerum seem to be an ideal habitat for the Wheatear, and it is one of the commonest birds during the brief summer, nesting abundantly in the rocky gorges.

The earliest date on which a Wheatear was observed was March 22, 1910, and isolated hen-birds were seen occasionally up to April 2, when the first male appeared. The numbers gradually increased until, on April 19, they could be described as "numerous" on the grassy slopes of the fortifications and on the rising ground south of the town. Both eggs and young were to be found in the first week in June. The autumn migration began about August 26, when large flights of male birds were seen. The movement then continued steadily until the end of August, my camp and the rough ground outside it being alive with Wheatears every day at sundown. From the first days of September they became much scarcer, but were constantly observed in twos and threes until long after the snow had begun to creep down from the mountain-tops and the frost was hard at nights. Most of them had disappeared by the 20th of

October, and the latest date on which Wheatears were recorded is November 3, 1911.

(I presume that the Isabelline Wheatear must occur in these regions, but I am afraid that I was not on the lookout for it and overlooked it.)

Enanthe xanthomelæna. Black-throated Wheatear.

A few pairs bred regularly in some sheltered gullies near the town. I never saw them earlier than April 27, and I have come across newly-fledged young on the 17th of August.

Cinclus cinclus caucasicus. Caucasian Dipper.

On February 10, 1911, I found one in a ditch within the town walls.

Troglodytes troglodytes. Wren.

On October 26, 1910, I observed three Wrens in a rocky gully near the town.

Muscicapa grisola. Spotted Flycatcher.

Is common as a migrant, arriving about April 26 and returning in considerable numbers between the 5th and the 26th of September. A certain number remain to nest in the poplars in the town, and in July I have noticed fledglings near my camp and at Boghaz. The autumn migrants almost invariably made their appearance late in the afternoon and remained till about 9 or 10 next morning.

Muscicapa collaris. Collared Flycatcher.

Arrives in small numbers about April 10, and remains to breed in suitable localities. Considerable parties of young birds are to be seen in the late days of July, and from that time onwards the passage movement increased in intensity, reaching a climax about August 7, when, in 1910, I recorded them as "swarming" in my camp. They were, however, almost daily guests during the remainder of the month, though in decreasing numbers, and September had begun before the last stragglers had gone.

They were always more abundant in the morning, and they were often in company with Spotted Flycatchers.

Muscicapa semitorquata. Half-collared Flycatcher.

On April 12, 1910, after a strong S.W. gale, which had evidently compelled great numbers of migrants to interrupt their journey, I found about twenty of these Flycatchers, males and females, in a row of poplars near the Tortum Gate, and on the 15th and 17th, during snowy weather, I saw two hen-birds in different spots within the walls. I also observed single specimens on the 18th and 20th of August at my camp.

Muscicapa parva. Red-breasted Flycatcher.

On September 25, 1910, observed three in my camp and one among some trees a quarter of a mile away. None were red-breasted, but their habits and plumage left no doubt as to their identity. On the following day I saw another, likewise without a red breast, in the Boghaz, and on September 29 I saw an adult male.

Hirundo rustica. Swallow.

The Swallow is abundant in the Passen Plain and is also to be found in numbers in the villages of the Erzerum plateau; but, for some reason unknown to me, it does not frequent the town itself, where the Swifts are in exclusive possession.

The earliest dates on which I observed the Swallow were April 28 in 1910 and April 22 in 1911, and these were the forerunners of enormous flights, but it was not until about May 5 that the local birds seemed to take possession of their summer quarters. I imagine these birds began to return southwards (or, rather, south-westwards, as all the migrants did) about the middle of August, but, despite careful watch, I found their movements most baffling, many large flights seeming to take a north-eastern direction as late as after mid-September—perhaps attracted by the extensive marshes of the Kara Su. After this date, however, their direction was uniformly south, and the last flights were seen on October 10–12. A single bird was observed in the town on November 13, 1910.

Riparia riparia. Sand-Martin.

The only spots in which I found colonies of Sand-Martins were the Boghaz, near my camp, and the banks of the Neby Chai, in the Passen Plain, in the latter of which places Bee-eaters also nested.

Iynx torquilla. Wryneck.

On April 8, 1910, I put up a Wryneck in the Turkish cemetery, this being the only specimen observed in the spring. Two or three were, however, seen in August and September of each year, and I am inclined to suspect that they spend some days in the neighbourhood before continuing their journey.

Cuculus canorus. Cuckoo.

The Cuckoo arrives as early as May 15, and until early in July may be heard and seen in small numbers, not only in the few groups of trees in the district, but also in various stony gullies where the abundance of Wheatears' and Rock-Sparrows' nests is doubtless an attraction.

The Cuckoo became silent before the end of July, and was seldom seen after the 18th of August, but in 1910 I saw one in my garden in town on September 1st.

Micropus apus. Swift.

The Swifts arrive regularly on April 28-30, and seem to make their headquarters in the town, where the ruinous citadel, the many minarets, and the extensive fortifications afford ideal nesting accommodation for countless thousands. Another attraction must be the abundance of flies, not unnatural in a town where the main occupation of the inhabitants in summer is the preparation of "tezek," *i. e.* sun-dried cakes of dung, to serve as fuel during the eight months' winter. In 1910 they began to disappear on August 15, and on the 17th there was not one left, but after sundown on the same day my attention was arrested by their familiar scream, and, looking up, I saw clouds of them at an immense height, flying S.E. against the wind.

I observed smaller flights outside the town on the following days, but none after August 30.

In 1911 they arrived and departed practically on the same dates as in the preceding year.

Micropus melba. Alpine Swift.

One pair observed on May 18, 1911.

Caprimulgus europæus. Goatsucker.

At least two pairs bred in Baghaz in 1910 and were seen regularly until the 28th of September.

Merops apiaster. Bee-eater.

The first week in May sees the arrival of the Bee-eaters which abound in the Erzerum and Passen Plains, and often nest in the same places as the Sand-Martins. Their musical notes are constantly heard in the hot bright days of summer, and enormous flocks pass constantly during September, when the trees near my camp were a much-frequented roosting-place.

Upupa epops. Hoopoe.

In mid-April, when the dark streaks in the snowy mantle of the lower plain betoken the sun's increasing warmth, the Hoopoes begin to appear, either singly or in parties of five or six, and they are frequently to be seen in the desolate and extensive cemeteries or on the grassy slopes of the fortifications. They breed in fair numbers in the town and village, and I saw a good many at Hassan Kala'a in the Passen Plain. A migration movement is perceptible in the first days of August, and continues till nearly the end of September, the 27th being the latest date of observation in the unusually mild autumn of 1911.

Coracias garrulus. Roller.

The Roller was rarely observed during the spring migration (one on April 27 and one on May 14, 1911) and never in summer; but it is common in the plains of Erzinjan and

Passen, where the altitude is much lower and general conditions more favourable.

It is, however, a regular autumn visitant at Erzerum, and from the third week in August may be seen regularly, sometimes in parties of six or eight, sometimes alone. I seldom observed any after 10 A.M., and they almost invariably dropped into the trees or settled on boulders near the camp at a late hour in the afternoon or even after sunset. The passage usually continues till September 20, but in 1911 I recorded seeing two birds on October 2.

Asio accipitrinus. Short-eared Owl.

I observed one on the fortifications on April 7, 1910.

Strix aluco. Tawny Owl.

During the summer I occasionally heard a call which led me to believe that there were Wood-Owls in the neighbourhood of my camp.

Otus scops. Scops Owl.

On September 12, 1910, I shot a female at my camp. Not having heard this Owl's call during the summer, I presume it does not breed at Erzerum.

Bubo bubo (? *ruthenus*). Eagle-Owl.

My personal observation of the Eagle-Owl was confined to hearing its call near my tents; but on two occasions one of my servants, who was familiar with the bird, from having had charge of one in my possession in Bulgaria, saw a live Eagle-Owl being offered for sale in the town, and I was shown several stuffed specimens. The local name for the bird is identical with the German "Uhu."

Carine bactriana. Eastern Little Owl.

I secured several specimens of this Owl, and they, with all those I had an opportunity of observing closely, corresponded to the description given in Dresser's 'Manual.' They were constantly to be seen from mid-April till late August, and bred in the fortifications as well as in a rocky gully east of the town.

Gyps fulvus. Griffon Vulture.

By no means a usual sight, but could be seen occasionally in some numbers between June and September. I once saw about twenty soaring in company with Egyptian Vultures, and in the autumn of 1910 the prevalence of cattle-plague attracted them in unusual numbers.

Vultur monachus. Black Vulture.

On September 20, 1910, I saw three Black Vultures helping some Griffons and Egyptian Vultures to devour a carcass.

Neophron percnopterus. Egyptian Vulture.

Both immature and adult specimens were observed between April 29 and September 2, but the bird is by no means common. On one occasion I saw over half a dozen of them at Hassan Kala'a, where the climate is considerably more genial than that of Erzerum.

Circus æruginosus. Marsh-Harrier.

When spending a day at Ilijé on May 5, 1910, I saw one, and presume they are not uncommon in the marshes. I also saw another near my camp on September 17-19 of the same year.

Circus cyaneus. Hen-Harrier.

Observed in 1910, one male on April 4 and one female on April 7. During the latter part of September a pair haunted the neighbourhood of my camp.

Buteo desertorum. Steppe-Buzzard.

Large passages of Buzzards take place in spring and autumn, and, as far as could be concluded from observation and from specimens handled, all belonged to the species *Buteo desertorum*.

In 1910 the first record was dated April 2; on April 9 about thirty appeared circling over the town, and, despite snow and cold, small parties and isolated individuals continued to pass during the ensuing days, sometimes resting for hours on the tombstones in the Turkish cemeteries.

They were very seldom seen during the summer, but from August 16 they appeared in ones and twos at my camp, and on September 8, at sunset, a flock arrived from the N.E. and settled on the slopes of Eyer Dagh, a hill close by. On September 22 another flock, consisting of many hundreds, appeared in the late afternoon and, after long manœuvring over Eyer Dagh, alighted in and around my camp and at the American mission-camp about a quarter of a mile away, where there were some large trees. The travellers must have been exhausted, as they settled as thickly as Starlings on the small willows and poplars around my tents and formed a dense mass on the bare hill-side, allowing a very close approach before they shifted their position by a few yards. They were completely silent, but the night was a restless one for the inmates of the camp, as the slender branches of the trees afforded poor perching accommodation for the numbers of heavy birds that crowded them, and were constantly giving way. The result was a ceaseless crashing and fluttering, and sleep was impossible till the whole company rose and departed shortly before dawn. An exactly similar experience was repeated on the following two days and on the 25th, when enormous numbers of Buzzards arrived from the N.E. at 10.30 A.M., passing over the plain and disappearing in a S.W. direction behind Eyer Dagh. On the following day only a single straggler was seen; but on the 28th, at about an hour before sunset, the largest passage of all began and continued till some time after dark. The birds came from the N. and N.E. in flights of about 150, but the separate flights followed one another at such short intervals that there must have been several thousands in view at one time, and the stream continued without interruption for about two hours. The rear-guard settled around my tents as described above, and a most unrepeseful night again ensued, although guns were fired in order to secure specimens. The last Buzzard was seen on October 16.

In 1911, no passages on this large scale were noted, but the migrations took place almost at the same dates, the

passage northward having begun somewhat earlier (March 19).

Aquila heliaca. Imperial Eagle.

I seldom had the opportunity of observing this Eagle at sufficiently close quarters to enable me to speak positively concerning its identity, but I believe that I saw it occasionally, except from October to February.

Astur palumbarius. Goshawk.

One observed on September 4, 1910.

Accipiter nisus. Sparrow-Hawk.

The Sparrow-Hawk is resident in small numbers throughout the year, except in December and January, when it disappears, presumably in search of less inclement regions. The earliest date on which I observed it was January 23, 1912, and towards the end of March the increased numbers seemed to indicate a migration movement; but in autumn there was a well-defined passage from the end of September until the first week in November, small parties of about half a dozen birds being visible. These used apparently to arrive late in the afternoon, and I noted that on September 20, 1910, a party of six alighted at dusk on the hill-side close to my camp.

The Sparrow-Hawk, like the Kestrel, nests in the tall poplars in the Armenian cemetery and in the kitchen-gardens.

Milvus migrans. Black Kite.

A few pairs appeared to nest near the town, and in the first half of April a certain number were observed on passage. The autumn migration was much more noticeable, perhaps on account of my being in camp at the time. On September 4, 1910, a flight of about 120 individuals alighted on the hill-side behind my tents at about sundown and rested there for some time, eventually moving on about a quarter of a mile to a group of trees, where they perched for the night. During the remainder of the month they were seen almost daily, either in twos and threes or singly,

but on two occasions I came across small flocks (one of six and one of twenty) resting in the fields. The latest date on which a Kite was seen was the 10th of November, when the weather was already cold.

Falco subbuteo. Hobby.

Very seldom observed. In 1910 I saw one on May 5 at Ilijé, one on August 22, and one on September 10. In the following year a specimen haunted my camp for some days in late July, and I recorded single individuals on August 28 and September 16.

Falco tinnunculus. Kestrel.

Common Kestrels are to be seen throughout the year, and there appears to be a migratory movement in April and September; but it was not always possible to distinguish between these birds and the Lesser Kestrels.

Falco naunanni. Lesser Kestrel.

The Lesser Kestrel usually appears about the middle of April, and enormous numbers are to be seen in the first week of May. Many remain to breed in the town and neighbourhood. The southward migration becomes noticeable after the beginning of September, and for about a fortnight one's attention is arrested by the thousands of birds which fill the air towards sundown. Stray individuals are, however, to be seen till well on in October.

Anser sp. Goose.

I was only able to record the following observations:—

“1910, March 20. Weather still and sunny. This forenoon saw two large strings of Geese flying southwards. I imagine they settled not far off. November 16. A brilliant day with 15 degrees of frost. Saw a string of at least 100 Geese about 1 P.M. Others passed later.

1911, February 8. Heard Geese passing at night. November 6. Sunny weather. Saw a gaggles of 40 Geese flying N.E. this afternoon. November 13. At midday about 40 Geese were manœuvring over the town, evidently making for the south.”

Tadorna casarca. Ruddy Sheldrake.

Breeds very abundantly in the Kara Su marshes, and may frequently be seen flying over the town in pairs.

Anas boschas. Mallard.

Abundant in the marshes.

Querquedula querquedula. Garganey.

A specimen was brought to me on March 30, 1910.

Querquedula crecca. Teal.

A pair were brought to me on October 24, 1910.

Spatula clypeata. Shoveller.

A specimen was brought to me on November 2, 1910.

Dafila acuta. Pintail.

A specimen killed in the Kara Su marshes was brought to me on March 30, 1910.

Ardea cinerea. Common Heron.

Common in the marshes. I have heard them passing in large numbers by night early in September.

Egretta alba. Great White Heron.

I saw two at Ilijé on May 5, 1910.

Egretta garzetta. Little Egret.

Was seen by me only once, on May 5, 1910, at Ilijé, but is presumably common.

Nycticorax nycticorax. Night-Heron.

Common in the marshes from the beginning of May onwards.

Ciconia ciconia. White Stork.

The Stork is less abundant in the Erzerum district than in the lower and warmer plains of Passen and Erzinjan, but a few pairs arrive in the first week of April, and nest in the town and the villages adjacent to the Karu Su marshes.

On August 15, 1910, I saw a flight of about 200 proceeding in a S.E. direction, and smaller parties were occasionally seen later on. A solitary specimen was noted as late as September 25, 1910.

Grus grus. Common Crane.

The Crane arrives in the marshes in the first week in April, and remains in some numbers during the summer.

Otis tetrax. Little Bustard.

Not uncommon in the plain, and much sought after by gunners.

Gallinago gallinago. Common Snipe.

One observed on September 26, 1910.

Totanus totanus. Redshank.

Observed in numbers at Ilijé on May 5 and on subsequent occasions in the marshes.

Totanus hypoleucus. Common Sandpiper.

The Common Sandpiper arrives early in April, the first date of observation in 1910 and 1911 being the 9th of that month. Early in May it was widely distributed in the Kara Su valley and at Ilijé, but I did not ascertain whether it remained to breed. A few were observed during the latter half of August, when large flights of Waders passed during the night.

Limosa limosa. Black-tailed Godwit.

Two specimens were brought to me on April 14, 1910.

Ægialitis dubia. Little Ringed Plover.

Common in suitable localities in the Erzerum and Passen Plains. Earliest date of observation, April 27.

Vanellus vanellus. Lapwing.

The Lapwing arrives about the 18th of March, and by the end of the first week in April large flocks are to be seen. They spend the summer in the marshy fields adjacent to the Kara Su marshes and disappear towards the end of September.

Hæmatopus ostralegus. Oyster-catcher.

I saw two pairs on May 5, 1910, at Ilijé.

Larus ridibundus. Black-headed or Laughing Gull.

These are to be seen in the vicinity of the town as early

as the first days of February, the 2nd of this month being my earliest record in 1911. Many are then in winter plumage, and they seem to live chiefly on garbage until the marshes become accessible. During the summer they abound in the Kara Su swamps, and also on the Araxes in the Passen Plain. I have no notes recording the date of their departure.

Sterna hirundo. Common Tern.

A common summer visitor in the marshes and in the Passen Plain.

Hydrochelidon nigra. Black Tern.

An abundant summer visitor in the Kara Su marshes.

Podiceps cristata. Great Crested Grebe.

I saw a family-party on the Kara Su on June 25, 1910.

Podiceps griseigena. Red-necked Grebe.

An immature bird was brought to me on August 19, 1910.

Columba palumbus. Wood-Pigeon.

One observed on April 9, 1911.

Columba livia. Rock-Dove.

Was observed early in March and became increasingly numerous until the end of April in the fields round the town, whither the gradual melting of the snow attracted flocks of Lapwings, Starlings, Rooks, Jackdaws, and Meadow-Pipits. Between this period and autumn I seem to have made no observations, but solitary birds and small parties are noted as having been seen between August and October.

Streptopelia turtur. Turtle-Dove.

Found sparingly in the few spots where trees can grow. They arrive at the end of April, and after the 3rd or 4th of September numerous small flights were observed proceeding S.W. through the Boghaz defile. Many of these spent the night in the trees at my camp. I have observed isolated individuals as late as October 7.

Pterocles arenarius. Sand-Grouse.

Inhabits the drier parts of the plain in large numbers, and is much sought after for food.

Caccabis chucar. Chukar Partridge.

Was observed occasionally, and in winter could be met with on the fortifications. In the coldest months they are sometimes so emaciated that they can be caught by hand.

Coturnix coturnix. Quail.

A few were observed during the month of May and from the first days of August till early in September.

II.—*Notes on Birds observed in the North Sea and North Atlantic Ocean during the Autumn and Winter of 1914.*

By Lieutenant J. N. KENNEDY, R.G.A., M.B.O.U.

THE observations given in the following paper were made over a wide area of the North Sea and North Atlantic Ocean, extending northward to the Faroes, eastward to the Norwegian coast, westward beyond St. Kilda, and southward as far as the Heligoland Bight.

It will be seen that the number of species met with was influenced not only by locality but by weather conditions, this point being well illustrated between the 5th and 9th of November when we were patrolling some forty miles from the island of St. Kilda, during the approach of a gale.

The noon position on each day is given, and I have added notes on the weather which may prove of interest in connection with the other observations.

The nomenclature adopted is that of the B. O. U. List of British Birds, 1915.

4 August—9 August. Between these dates no systematic notes were made. The only species of interest observed was the Great Skua (*Catharacta skua*), one of which followed the ship on several occasions during a spell of calm weather. We were at that time in the vicinity of the Orkneys.